

Mechanism for the Distortionless Duplication of Individual Photons In-Flight

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Communications systems predicated upon the emission and detection of individual photons are often marketed as being impervious to surveillance on the basis of the logic that, if a photon is intercepted, there is no way for data to be both intercepted and for the sender and recipient of the data to fail to notice it as interception would prevent receipt of the information. A wave of light can be split recursively until it reaches the scale of the individual photon, at which point, so the logic goes, it can be split no more.

Not only are single-photon communications systems less than practical given the difficulty in transmitting a single photon over any great distance, I would posit that it is absolutely possible to duplicate a photon in such a way so as to be able to discern its properties and to ensure that the original photon arrives at its intended destination.

There are; aside from quantum communications intercept; many other applications for duplicating photons in such a manner. Photoamplifiers both for night-vision and for optical computing applications would benefit from the ability to duplicate individual photons without distortion.

In order to achieve this lofty goal of duplicating a photon and its properties without converting the photon into an electron at any point in this duplication process, i.e., duplication of a photon mid-flight, one, first, needs to understand of what a photon is actually composed. A photon is a magnetic vortex which carries some electrical charge, that charge being conferred by neutrinos; the same particles responsible for gravity; and the number of neutrinos carried by the photon, although it tends to wane over time, can be replenished under certain circumstances. This has not yet been experimentally demonstrated because the continual charge transfer between the many individual photons in a wave of light creates the illusion that the charge of a photon is a constant. Waves of light, of course, diminish relative to the distance traveled, even if absolute collimation is somehow ensured. As waves of light diminish in amplitude, the count of photons decrease, but the charge of the remaining photons remains constant because photons at the peaks and troughs of each phase of light sacrifice themselves *in toto* in order to maintain a homogeneous charge of photons throughout the wave.

In recent experiments, researchers have been able to achieve, if briefly, the separation of what are termed 'spinons' and 'chargeons,' which is to say, the magnetic vortex and the electrical components of electrons (which are high-mass analogues to photons) in order to create the two distinct formations of energy. Although ultra-cold transition metal dichalcogenides were used to achieve this, there are other ways to create spinons when one is dealing with photons rather than electrons, which were used the referenced experiment. It helps to understand that there is no difference between an exciton and a spinon.

Photons can be used to create their own versions of these spinons or excitons, which I will henceforth refer to simply as 'spinons' to avoid confusion. These photonic spinons have a higher rotational velocity and are more difficult to detect than traditional spinons, largely because they are produced by phase cancellations and are highly ephemeral.

The same mutual magnetic attraction which is at play in phase cancellation events at the quantum level which produces the mutual annihilation of photons through mutual charge depletion of quantum electrical energy can allow a spinon, which we could also think of as a "blank photon," to influence the trajectory of a photon in flight which we might wish to replicate. That blank photon, if it could be harvested from a phase cancellation field and positionally stabilized with respect with the aforementioned waveguide, could be given new life as a duplicate of an existing photon.

If we suppose that we can use carefully calibrated beams of light which are precisely 180 degrees out of phase with one-another, that these beams of light are matched in terms of polarity and that we can direct intercepted light through a waveguide passing within a half-angstrom of the photonic spinons this deliberate phase cancellation would generate, we could cause the intercepted photons to transfer their properties, albeit with weak electrical charge, to the spinon or 'blank photon.' This could be thought of as photonic version of an induced pluripotent stem cell being capable of becoming any type of cell in the human body. Just as an iPS cell can be made to turn into a different cell type through mere proximity, a blank photon can gain the properties of an original photon through proximity.

This would also result in both the original and the duplicate undergoing a trajectory change which would necessitate a course correction in order to ensure that the original arrives at its intended destination. The original and the duplicate would, importantly, need to undergo a restoration of charge in order to ensure that they retains the electrical substance required to arrive at the destination, the duplicate having the weakest charge of all as it would be but a faint impression of the original photon until its charge is restored to 100%, a bit like a battery. The difference here is that these batteries are fundamentally like cars, each of which have fuel tanks which can vary in terms of fullness, but each of which can carry fuels of different potency. Differences of frequency at this sub-photonic level are a transferable property. When the "fuel" or electrical energy of a photon is transferred into another, such as a blank photon, that blank is imbued with energy-type of the same potency as the original, however little is transferred. However this property is set, when charge is replenished via gravitational field, the photon acts as its own power converter which uniforms that energy, preserving the property of what we would call frequency, at the wave-level.

Therefore, when we perform a charge replenishment, the frequency property or "energy level" of the photon, newly incorporated neutrino energy takes on the energy-level of the photon which imprinted upon the blank.

After passing near to the aforementioned spinon lattice, the original and, especially, the duplicate photons must be passed through a quantum charge

replenishment mechanism. The mechanism I prescribe for performing this task consists of a lattice composed of a series of proton traps each of which force two protons (sans electrons) to be trapped in a space meant for one and which are held in place with a magnetic field, the trap being open on one side. The protons in the trap are agitated through the use of what may be termed an alternating Coulomb Force Line projection system which allows for electroweak forces to be projected over distance irrespective of any physical barriers. These should be crystal-based and phononically-actuated.

The rapid oscillation of the protons in the traps results in the nano- scale gravity fields associated with those protons being amplified and biased so that some portion of that gravitational energy is offset from center. This would enable gravitational particles sc. neutrinos to be loaded into the newly duplicated photons, thereby increasing their charge without corrupting the fundamental property of frequency carried by it.

High-resolution optical systems, sensitive radio-telescopes and a variety of other technologies would greatly benefit from the ability to capture individual photons and faithfully duplicate them in-transit prior to a conversion into electrical energy.